CLAIMS

What is claimed is:

5   1. A method of detecting variations in a
spatially correlated parameter comprising:
          measuring a selected parameter of each of a plurality
of electronic circuits replicated on a common substrate;
          calculating a difference between a value of the
10 selected parameter at a target location and that of an
identical relative location with respect to the target
location for each of the plurality of electronic circuits
to generate a distribution of differences;
          calculating an absolute value of the distribution of
15 differences; and
          calculating an average of the absolute value of the
distribution of differences to generate a representative
value for the residual for the identical relative location.

20   2. The method of Claim 1 further comprising
plotting the residual as a function of the identical
relative location to determine a spatial correlation
pattern of the selected parameter.

25   3. The method of Claim 1 wherein the electronic
circuit is an integrated circuit die and the common
substrate is a silicon wafer.

          4. The method of Claim 1 wherein the selected
30 parameter is quiescent current.

5.   The method of Claim 1 further comprising performing a lot averaging for each wafer X-Y coordinate so that a new set of best estimates is re-calculated for each X-Y position.

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6.   The method of Claim 1 wherein the common substrate comprises a plurality of common substrates wherein best estimates for a given X-Y location are identical to those of a corresponding location on another

10   of the plurality of common substrates. This technique may be improved by re-ordering the wafers in the sequence in which they were processed to ensure more accurate estimation.

15   7.   The method of Claim 6 further comprising re-ordering the plurality of common substrates in a same order in which they were processed.

8.   A process for reducing the variance of a

20   selected parameter in a production lot of integrated circuits comprising:
        measuring a selected parameter of each of a plurality of integrated circuit die replicated on a wafer substrate;
        calculating a difference between a value of the

25   selected parameter at a target location and that of an identical relative location with respect to the target location for each of the plurality of integrated circuit die to generate a distribution of differences;
        calculating an absolute value of the distribution of

30   differences;

calculating an average of the absolute value of the distribution of differences to generate a representative value for the residual for the identical relative location having an expected value range of the selected parameter at

5 the identical relative location; and

rejecting any of the plurality of integrated circuit die having a value of the selected parameter that lies outside the expected value range.

10   9. The process of Claim 8 further comprising plotting the residual as a function of the identical relative location to determine a spatial correlation pattern of the selected parameter.

15   10. The process of Claim 8 wherein the selected parameter is quiescent current.